

Approved: 

# MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Travis Kelly, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-19014  
**Date:** December 7, 2020

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Mike Thoma reviewed the application. Please see Mike's Groundwater Review and the Well Reports.

Applicant's Well #1 (LANE 76593): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (LANE 76667): Based on a review of the Well Report, Applicant's Well #2 seems to protect the groundwater resource.

The construction of Applicant's Well #2 may not satisfy hydraulic connection issues.

Applicant's Well #3 (LANE 76317): Based on a review of the Well Report, Applicant's Well #3 seems to protect the groundwater resource.

The construction of Applicant's Well #3 may not satisfy hydraulic connection issues.

STATE OF OREGON  
 WATER SUPPLY WELL REPORT  
 (as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# 132088  
 START CARD # 2157101  
 ORIGINAL LOG #

(1) LAND OWNER  
 Owner Well I.D. \_\_\_\_\_  
 First Name Frederick Last Name Haase  
 Company \_\_\_\_\_  
 Address 89258 Greenhill  
 City Eugene State OR Zip 97402

(2) TYPE OF WORK  New Well  Deepening  Conversion  
 Alteration (complete 2a & 10)  Abandonment (complete 5a)

(2a) PRE-ALTERATION  
 Dia + From To Gauge Stl Plstc Wld Thrd  
 Casing: \_\_\_\_\_  
 Material From To Amt sacks/lbs  
 Seal: \_\_\_\_\_

(3) DRILL METHOD  
 Rotary Air  Rotary Mud  Cable  Auger  Cable Mud  
 Reverse Rotary  Other \_\_\_\_\_

(4) PROPOSED USE  Domestic  Irrigation  Community  
 Industrial/ Commercial  Livestock  Dewatering  
 Thermal  Injection  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION Special Standard  (Attach copy)  
 Depth of Completed Well 38' ft.  
 BORE HOLE SEAL sacks/  

Dia	From	To	Material	From	To	Amt	lbs
10"	0'	18'	Bentonite	0'	18'	10	5cks
6"	18'	38'				8	cks
						Calculated	

How was seal placed: Method  A  B  C  D  E  
 Other As Per DAR 690-210-340 Screened  
 Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material 8 Hyd.  
 Filter pack from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_ Size \_\_\_\_\_  
 Explosives used:  Yes Type \_\_\_\_\_ Amount \_\_\_\_\_

(5a) ABANDONMENT USING UNHYDRATED BENTONITE  
 Proposed Amount \_\_\_\_\_ Pounds Actual Amount \_\_\_\_\_ Pounds

(6) CASING/LINER  

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6"		+2'	38'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

 Shoe  Inside  Outside  Other Location of shoe(s) None  
 Temp casing  Yes Dia \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

(7) PERFORATIONS/SCREENS  
 Perforations Method None  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_  

Perf/Screen	Casing/Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Teel/pipe size

(8) WELL TESTS: Minimum testing time is 1 hour  
 Pump  Bailer  Air  Flowing Artesian  

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
<u>289pm</u>		<u>38'</u>	<u>1 Hr</u>

 Temperature 58 °F Lab analysis  Yes By \_\_\_\_\_  
 Water quality concerns?  Yes (describe below) TDS amount 129  

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)  
 County Lane Twp 17S N/S W Range 4W E/W W  
 Sec 19 1/4 of the \_\_\_\_\_ 1/4 Tax Lot 100  
 Tax Map Number \_\_\_\_\_ Lot \_\_\_\_\_  
 Lat 44° 5' 4" N DMS or DD  
 Long 123° 12' 35" W DMS or DD  
 Street address of well  Nearest address  
Same

(10) STATIC WATER LEVEL  

Existing Well / Pre-Alteration	Date	SWL (psi)	+ SWL (ft)
Completed Well	<u>5-8-19</u>		<u>8'</u>

 Flowing Artesian?  Dry Hole?

WATER BEARING ZONES Depth water was first found 24'  

SWL Date	From	To	Est Flow	SWL (psi)	+ SWL (ft)
<u>5-8-19</u>	<u>24'</u>	<u>38'</u>	<u>289pm</u>		<u>8'</u>

(11) WELL LOG  
 Ground Elevation \_\_\_\_\_  

Material	From	To
<u>Grey Clay</u>	<u>0</u>	<u>11</u>
<u>Cemented Gravel</u>	<u>11</u>	<u>17</u>
<u>Brown Sand w/ Gravel</u>	<u>17</u>	<u>26</u>
<u>Brown Gravel w/ Sand</u>	<u>26</u>	<u>38</u>

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MAY 15 2019

OWRD

Date Started 5-8-19 Completed 5-8-19

(unbonded) Water Well Constructor Certification  
 I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.  
 License Number \_\_\_\_\_ Date \_\_\_\_\_  
 Signed \_\_\_\_\_

(bonded) Water Well Constructor Certification  
 I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.  
 License Number 751 Date 5-8-19  
 Signed D. Joe Paving  
 Contact Info (optional) Mid Valley Drilling Inc  
541-847-5470 Joe Paving

(1) LAND OWNER Owner Well I.D.  
 First Name Frederick Last Name Hause  
 Company \_\_\_\_\_  
 Address 89258 Greenhill  
 City Eugene State OR Zip 97402

(2) TYPE OF WORK  New Well  Deepening  Conversion  
 Alteration (complete 2a & 10)  Abandonment (complete 5a)

(2a) PRE-ALTERATION  
 Dia + From To Gauge Stil Plstc Wld Thrd  
 Casing: \_\_\_\_\_  
 Seal: \_\_\_\_\_

(3) DRILL METHOD  
 Rotary Air  Rotary Mud  Cable  Auger  Cable Mud  
 Reverse Rotary  Other \_\_\_\_\_

(4) PROPOSED USE  Domestic  Irrigation  Community  
 Industrial/ Commercial  Livestock  Dewatering  
 Thermal  Injection  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION Special Standard  (Attach copy)  
 Depth of Completed Well 37' ft.  
 BORE HOLE SEAL  

Dia	From	To	Material	From	To	Amt	sacks/ lbs
10"	0'	18'	Bentonite	0'	18'	10	Scks
6"	18'	37'				8	Scks
						Calculated	

How was seal placed: Method  A  B  C  D  E  
 Other AS PER OAR 690-210-340 Screened  
 Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material 8 Hyd  
 Filter pack from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_ Size \_\_\_\_\_  
 Explosives used:  Yes Type \_\_\_\_\_ Amount \_\_\_\_\_

(5a) ABANDONMENT USING UNHYDRATED BENTONITE  
 Proposed Amount \_\_\_\_\_ Pounds Actual Amount \_\_\_\_\_ Pounds

(6) CASING/LINER  

Casing	Liner	Dia	From	To	Gauge	Stil	Plstc	Wld	Thrd
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6"	11'	37'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 Shoe  Inside  Outside  Other Location of shoe(s) None  
 Temp casing  Yes Dia \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

(7) PERFORATIONS/SCREENS  
 Perforations Method None  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_  

Perf/S green	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour  
 Pump  Bailer  Air  Flowing Artesian  

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
30+ GPM		37'	1 Hr.

 Temperature 58° °F Lab analysis  Yes By \_\_\_\_\_  
 Water quality concerns?  Yes (describe below) TDS amount 121  

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)  
 County Lane Twp 17S NS Range 04W EW WM  
 Sec 19 1/4 of the \_\_\_\_\_ 1/4 Tax Lot 100  
 Tax Map Number \_\_\_\_\_ Lot \_\_\_\_\_  
 Lat 44° 4' 54" N DMS or DD  
 Long 123° 12' 29" W DMS or DD  
 Street address of well  Nearest address

89258 Greenhill Eugene, OR 97402

(10) STATIC WATER LEVEL  

Existing Well / Pre-Alteration	Date	SWL(psi)	+ SWL(ft)
Completed Well	5-30-19		11'

 Flowing Artesian?  Dry Hole?   
 WATER BEARING ZONES Depth water was first found 21'  

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
5-30-19	21'	37'	30+gpm		11'

(11) WELL LOG  
 Ground Elevation \_\_\_\_\_  

Material	From	To
Topsoil	0	2
Brown Clay	2	7
Brown Clay w/ Gravel	7	19
Brown Gravel w/ sand	19	37

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 JUN 13 2019  
 OWRD

Date Started 5-30-19 Completed 5-30-19

(unbonded) Water Well Constructor Certification  
 I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.  
 License Number \_\_\_\_\_ Date \_\_\_\_\_  
 Signed \_\_\_\_\_

(bonded) Water Well Constructor Certification  
 I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.  
 License Number 751 Date 5-30-19  
 Signed D. Joe Foving  
 Contact Info (optional) Midvale Drilling Inc  
541-847-5470 Joe Foving

STATE OF OREGON  
WATER SUPPLY WELL REPORT  
(as required by ORS 537.765 & OAR 690-205-0210)

LANE 76317

WELL I.D. LABEL# I 132076  
START CARD # 215531  
ORIGINAL LOG #

(1) LAND OWNER Owner Well I.D. \_\_\_\_\_  
First Name Fredrick D. Last Name Haase  
Company \_\_\_\_\_  
Address 89258 Greenhill Rd  
City Eugene State OR Zip 97402

(2) TYPE OF WORK  New Well  Deepening  Conversion  
 Alteration (complete 2a & 10)  Abandonment (complete 5a)

(2a) PRE-ALTERATION  
Dia + From To Gauge Stl Plstc Wld Thrld  
Casing:          
Material From To Amt sacks/lbs  
Seal: \_\_\_\_\_

(3) DRILL METHOD  
 Rotary Air  Rotary Mud  Cable  Auger  Cable Mud  
 Reverse Rotary  Other \_\_\_\_\_

(4) PROPOSED USE  Domestic  Irrigation  Community  
 Industrial/ Commercial  Livestock  Dewatering  
 Thermal  Injection  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION Special Standard  (Attach copy)  
Depth of Completed Well 38' ft.  
BORE HOLE SEAL sacks/lbs  
Dia From To Material From To Amt lbs  
10" 0' 21' Bentonite 0' 21' 9 sacks  
6" 21' 38' Calculated 9 sacks  
Calculated \_\_\_\_\_

How was seal placed: Method  A  B  C  D  E  
 Other as per OAR 690-210-340 screened  
Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material Hyd.  
Filter pack from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_ Size \_\_\_\_\_  
Explosives used:  Yes Type \_\_\_\_\_ Amount \_\_\_\_\_

(5a) ABANDONMENT USING UNHYDRATED BENTONITE  
Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER  
Casing Liner Dia + From To Gauge Stl Plstc Wld Thrld  
  6"  12' 38' 1.250      
Shoe  Inside  Outside  Other Location of shoe(s) None  
Temp casing  Yes Dia \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

(7) PERFORATIONS/SCREENS  
Perforations Method None  
Screens Type \_\_\_\_\_ Material \_\_\_\_\_  
Perf/S Casing/ Screen Scrn/slot Slot # of Tel/reen Liner Dia From To width length slots pipe size

(8) WELL TESTS: Minimum testing time is 1 hour  
 Pump  Bailer  Air  Flowing Artesian  
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)  
309pm \_\_\_\_\_ 38' 1 Hr

Temperature 56° °F Lab analysis  Yes By \_\_\_\_\_  
Water quality concerns?  Yes (describe below) TDS amount 142  
From To Description Amount Units

LANE 76317  
(9) LOCATION OF WELL (legal description)  
County Lane Twp 17S N8 Range 04 W E WWM  
Sec 19 1/4 of the \_\_\_\_\_ 1/4 Tax Lot 100  
Tax Map Number \_\_\_\_\_ Lot \_\_\_\_\_  
Lat 44° 5' 4" N DMS or DD  
Long 123° 12' 35" W DMS or DD  
 Street address of well  Nearest address

same

(10) STATIC WATER LEVEL  
Date SWL(psi) + SWL(ft)  
Existing Well / Pre-Alteration \_\_\_\_\_  
Completed Well 11-12-18 \_\_\_\_\_ 10'  
Flowing Artesian?  Dry Hole?

WATER BEARING ZONES Depth water was first found 21'  
SWL Date From To Est Flow SWL(psi) + SWL(ft)  
11-12-18 21' 38' 309pm \_\_\_\_\_ 10'

(11) WELL LOG Ground Elevation \_\_\_\_\_  
Material From To  
Topsoil 0 2  
Gray clay (sticky) 2 11  
Gray clay w/ gravel 11 21  
Brown sand 21 25  
Brown gravel & sand 25 38

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OWRD  
Date Started 11-12-18 Completed 11-12-18

(unbonded) Water Well Constructor Certification  
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.  
License Number \_\_\_\_\_ Date \_\_\_\_\_  
Signed \_\_\_\_\_  
(bonded) Water Well Constructor Certification  
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.  
License Number 751 Date 11-12-18  
Signed D. Joe Loving  
Contact info (optional) Mid Valley Drilling Inc  
541-847-5470 Joe Loving

# Groundwater Application Review Summary Form

Application # G- 19014

GW Reviewer M. Thoma

Date Review Completed: 11/12/2020

## Summary of GW Availability and Injury Review:

Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

## Summary of Potential for Substantial Interference Review:

There is the potential for substantial interference per Section C of the attached review form.

## Summary of Well Construction Assessment:

The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

*This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).*

**WATER RESOURCES DEPARTMENT**

**MEMO**

**11/12/2020**

**TO:**            **Application G- 19014**

**FROM:**        **GW: M. Thoma**  
                    (Reviewer's Name)

**SUBJECT: Scenic Waterway Interference Evaluation**

**YES**            The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

**NO**

**YES**

**NO**            Use the Scenic Waterway Condition (Condition 7J)

Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

**DISTRIBUTION OF INTERFERENCE**

*Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.*

Exercise of this permit is calculated to reduce monthly flows in   [Enter]   Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/12/2020  
 FROM: Groundwater Section M. Thoma  
Reviewer's Name  
 SUBJECT: Application G- 19014 Supersedes review of \_\_\_\_\_  
Date of Review(s)

**PUBLIC INTEREST PRESUMPTION; GROUNDWATER**

**OAR 690-310-130 (1)** *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

**A. GENERAL INFORMATION:**

Applicant's Name: Fredrick David Haase; Linda Reed Haase County: Lane

- A1. Applicant(s) seek(s) 1.0 cfs from 3 well(s) in the Willamette Basin,  
Long Tom subbasin
- A2. Proposed use Irrigation, Fish Culture, Livestock Seasonality: Mar-Oct (Irrigation); Year-Round (Fish Culture, Livestock)
- A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	LANE 76593	1	Alluvium	1	17S-04W-19 NENE	85 ft S, 380 ft E of NE cor S 19
2	LANE 76667	2	Alluvium	1	17S-04W-19 NENE	285 ft S, 115 ft E of NE cor S 19
3	LANE 76317	3	Alluvium	1	17S-04W-19 NENE	700 ft S, 500 ft E of NE cor S 19
4						

\* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	375	24	8	5/08/19	38	0-18	+2-38	-		28		A
2	375	21	11	5/30/19	37	0-18	+1-37	-		30		A
3	375	21	10	11/12/18	38	0-21	+2-38	-		30		A

Use data from application for proposed wells.

A4. **Comments:** The application map shows the wells to be located west of the NE corner of S 19 not east as described by the metes and bounds. This review assumes that the metes and bounds are meant to be west and not east and that the location of the PODs is correct as shown on the map.

A5.  **Provisions of the** Willamette (OAR 690-502) Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water  **are**, or  **are not**, activated by this application. (Not all basin rules contain such provisions.)  
 Comments: Two of the proposed PODs (POD #1 and #3) are producing from unconfined alluvium and are within ¼ mile of a surface water source; per OAR 690-502-0240 these PODs are presumed to be in hydraulic connection with surface water. This presumption is in addition to the findings in Section C.

A6.  **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction.  
 Name of administrative area: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070**

B1. **Based upon available data**, I have determined that groundwater\* for the proposed use:

- a.  is over appropriated,  is not over appropriated, or  **cannot be determined to be** over appropriated during any period of the proposed use. \* This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b.  **will not** or  **will** likely be available in the amounts requested without injury to prior water rights. \* This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c.  **will not** or  **will** likely to be available within the capacity of the groundwater resource; or
- d.  **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
  - i.  The permit should contain condition #(s) 7C (7-yr SWL); Medium Water-Use Reporting;
  - ii.  The permit should be conditioned as indicated in item 2 below.
  - iii.  The permit should contain special condition(s) as indicated in item 3 below;

- B2. a.  **Condition** to allow groundwater production from no deeper than \_\_\_\_\_ ft. below land surface;
- b.  **Condition** to allow groundwater production from no shallower than \_\_\_\_\_ ft. below land surface;
- c.  **Condition** to allow groundwater production only from the \_\_\_\_\_ groundwater reservoir between approximately \_\_\_\_\_ ft. and \_\_\_\_\_ ft. below land surface;
- d.  **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

**Describe injury** –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B3. **Groundwater availability remarks:** Groundwater levels in the area (reflected in data from well LANE0013051) show a stable long-term trend suggesting that groundwater for the proposed use would likely be within the Capacity of the Resource. However, a full calculation of water balance for the area has not been performed so Over-Appropriation, and thus Capacity of the Resource, cannot be definitively determined and so conditions listed in B1(d) are recommended.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Alluvium (Middle Sedimentary Unit)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Alluvium (Middle Sedimentary Unit)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Alluvium (Middle Sedimentary Unit)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Despite well reports showing static water levels being above the identified water-bearing zones, a composite review of well log data for the area shows that water levels are similar among most wells regardless of completed depth. This suggests that there are not specific aquifer zones within 100 ft depth and instead the shallow alluvial material makes up a single, continuous aquifer.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Amazon Cr	365	360-670	1300	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	1	Amazon Cr	365	360-370	1520	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Amazon Cr	365	360-370	960	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** GW elevations are similar to SW elevations and the wells are producing from a shallow alluvial aquifer.

**Water Availability Basin the well(s) are located within:** LONG TOM R > WILLAMETTE R – AB MOUTH (ID# 114)

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked  box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None		<input type="checkbox"/>	32.1	<input checked="" type="checkbox"/>	< 15%	<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	None		<input type="checkbox"/>	32.1	<input checked="" type="checkbox"/>	< 15%	<input checked="" type="checkbox"/>
3	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None		<input type="checkbox"/>	32.1	<input checked="" type="checkbox"/>	< 15%	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

**Comments:** Stream-depletion was estimated using the Hunt-1999 model and a range of aquifer parameters taken from the references below and representing a range of possible values. Based on the results of this modelling, estimated stream-depletion at 30 days is likely to be less than 15% for all three proposed PODs

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

SW #	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: \_\_\_\_\_

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: \_\_\_\_\_

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5.  **If properly conditioned,** the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
- i.  The permit should contain condition #(s) \_\_\_\_\_;
  - ii.  The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's proposed PODs have been found to be producing from an aquifer that is hydraulically-connected to surface water – specifically to Amazon Creek – at a distance of less than one mile. Two of the three PODs are less than ¼ mile from the surface water source and so, per OAR 690-009-0040(4)(a), the PODs are assumed to have the Potential for Substantial Interference. POD #2 is greater than ¼ mile distance. The proposed rate of appropriation of 1.0 cfs is greater than 1% for the 80%-exceedance flows for the given WAB and so the application as a whole is also assumed to have the Potential for Substantial Interference.

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**References Used:**

Gannett, M. W. and R. R. Caldwell. 1998. *Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-A.

Herrera, N. B., Burns, E. R., and T. D. Conlon. 2014. *Simulation of Groundwater Flow and the Interaction of Groundwater and Surface Water in the Willamette Basin and Central Willamette Subbasin*, Oregon. USGS Scientific Investigations Report 2014-5136.

Hunt, B. 1999. *Unsteady Stream Depletion from Ground Water Pumping*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

McClaghry, J. D., T. J. Wiley, M. L. Ferns, and I. P. Madin. 2010. *Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon*. Oregon Dept. of Geology and Mineral Industries. Open File Report O-10-13.

O'Conner, J. E., A. Sarna-Wojcicki, K. C. Wozniak, D. J. Polette, and R. J. Fleck. *Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon*. USGS Professional Paper 1620

OWRD Well Log Database – Accessed 11/12/2020

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. *Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-B.

**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #: \_\_\_\_\_ Logid: \_\_\_\_\_

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a.  review of the well log;
- b.  field inspection by \_\_\_\_\_;
- c.  report of CWRE \_\_\_\_\_;
- d.  other: (specify) \_\_\_\_\_

D3. **THE WELL construction deficiency or other comment is described as follows:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

D4.  Route to the Well Construction and Compliance Section for a review of existing well construction.

**Water Availability Tables**

## Water Availability Analysis

### Detailed Reports

LONG TOM R > WILLAMETTE R - AB MOUTH

WILLAMETTE BASIN

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Water Availability as of 11/13/2020

Watershed ID #: 114 ([Map](#))

Exceedance Level: 80% ▾

Date: 11/13/2020

Time: 9:35 AM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

### Water Availability Calculation

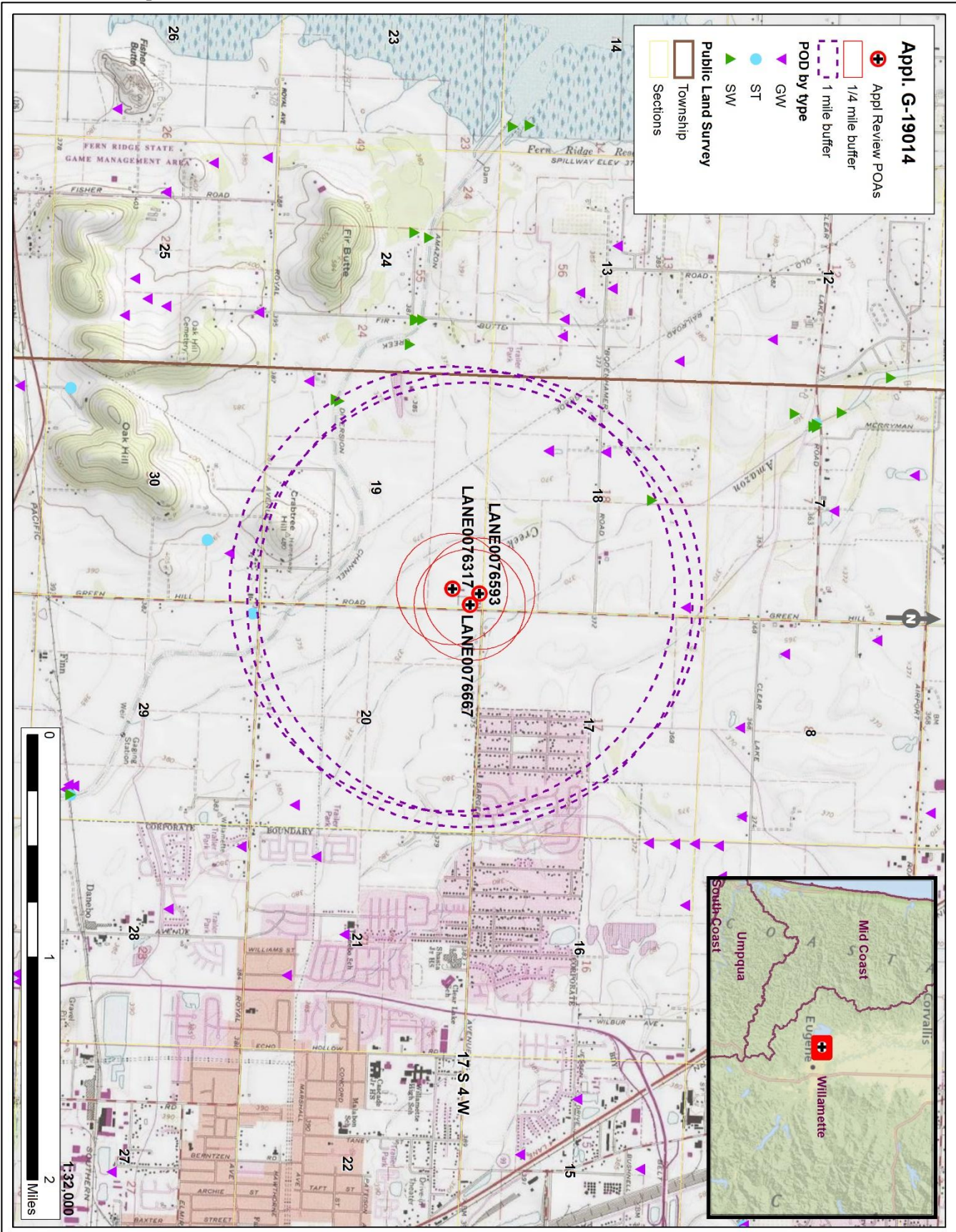
Monthly Streamflow in Cubic Feet per Second

Annual Volume at 50% Exceedance in Acre-Feet

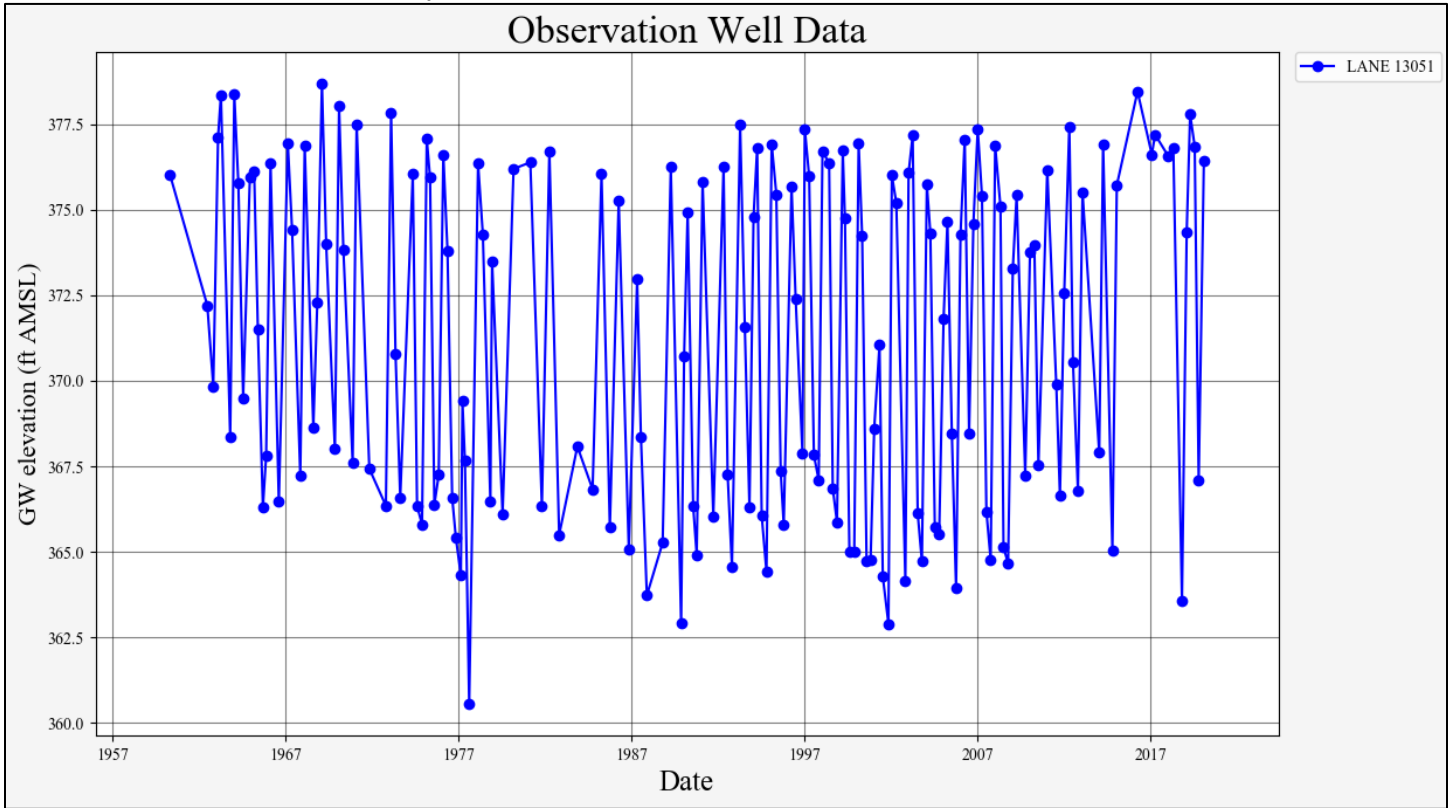
Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	568.00	149.00	419.00	0.00	0.00	419.00
FEB	697.00	389.00	308.00	0.00	0.00	308.00
MAR	596.00	555.00	41.00	0.00	0.00	41.00
APR	373.00	250.00	123.00	0.00	0.00	123.00
MAY	215.00	63.80	151.00	0.00	0.00	151.00
JUN	105.00	29.50	75.50	0.00	0.00	75.50
JUL	50.60	47.80	2.83	0.00	0.00	2.83
AUG	35.40	38.80	-3.36	0.00	0.00	-3.36
SEP	32.10	21.40	10.70	0.00	0.00	10.70
OCT	35.30	5.69	29.60	0.00	0.00	29.60
NOV	82.50	5.45	77.00	0.00	0.00	77.00
DEC	364.00	106.00	258.00	0.00	0.00	258.00
ANN	362,000.00	99,300.00	262,000.00	0.00	0.00	262,000.00



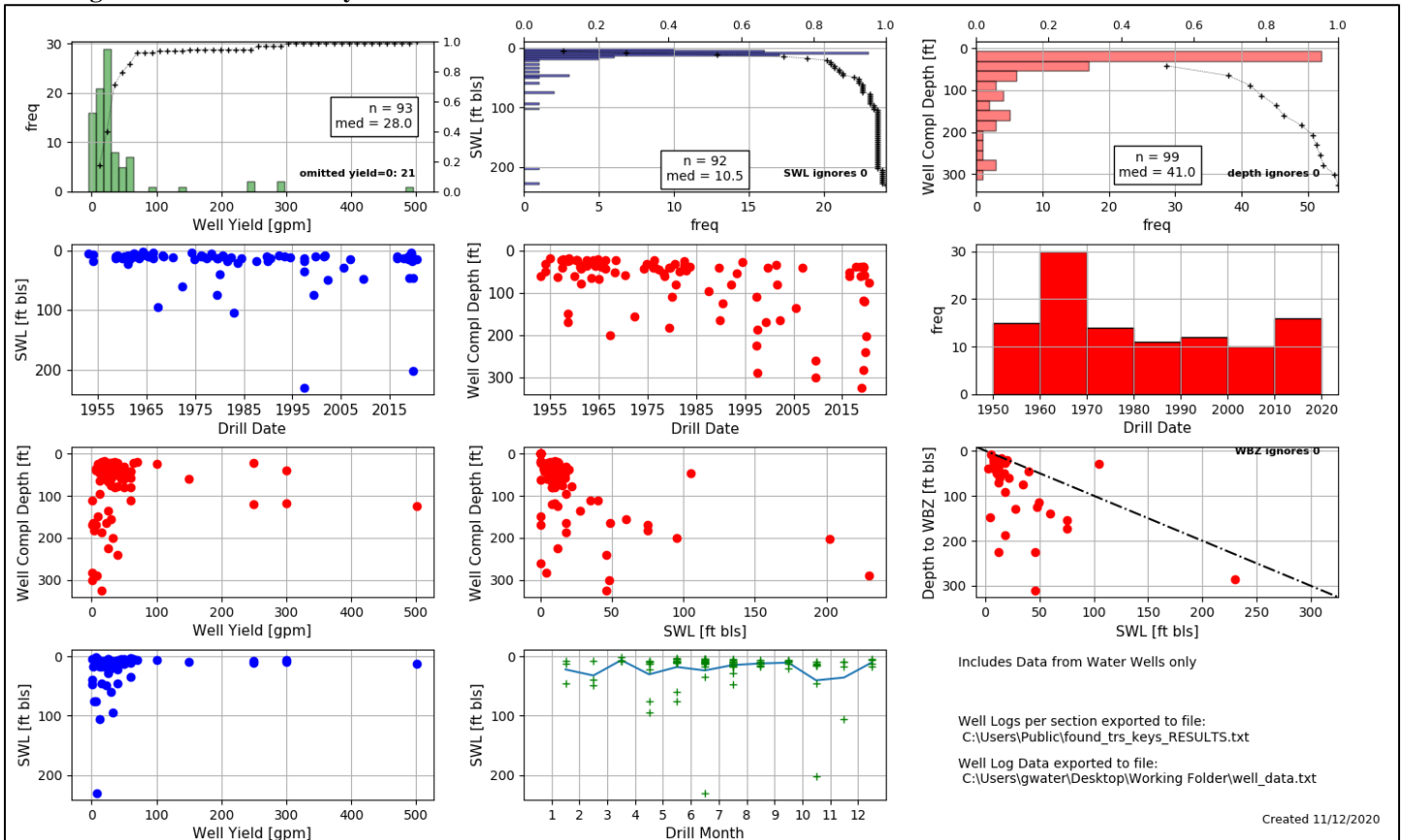
Well Location Map



### Water-Level Measurements in Nearby Wells



### Well Log Statistics from Nearby Wells



**Stream-Depletion Model Results**

PyHunt stream depletion analysis tool

Application type:	G
Application number:	19014
Well number:	1
Stream Number:	1
Pumping rate (cfs):	1
Pumping duration (days):	244.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	960	960	960	ft
Aquifer transmissivity	T	5000	1000	500	ft <sup>2</sup> /day
Aquifer storativity	S	5e-3	1e-3	5e-4	-
Aquitard vertical hydraulic conductivity	Kva	5e-4	1e-3	5e-3	ft/day
Not used		20.0	20.0	20.0	
Aquitard thickness below stream	babs	5	5	5	ft
Not used		0.2	0.2	0.2	
Stream width	ws	50	50	50	ft

Stream depletion for Scenario 2:

Days	10	30	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	1	4	4	3	4	5	5	6	7	7	8	6	5
Depletion (cfs)	0.01	0.04	0.04	0.03	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.06	0.05

Hunt (1999) transient stream depletion model

